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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,665

05/03/2006

Dae Rae Lee

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EXAMINER

BERNSTEIN, DANIEL A

ART UNIT

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4166

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,665	Applicant(s) LEE ET AL.	
	Examiner DANIEL A. BERNSTEIN	Art Unit 4166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/03/2005 and 03/16/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 7-10 and 12-19 rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication No. 2006/0048767 A1 to Lee et al. (Lee)

The applied reference has a common inventors Lee and Jung with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Lee teaches:

In reference to claim 1

An exhaust system in a radiation gas range comprising: a housing having exhaust openings (Fig. 3, exhaust duct 12) in a rear part for discharge of exhaust gas; a sheet of glass on top of the housing (ceramic glass 20) for transmission of radiant heat to a heating object placed thereon; front and rear burner housings (Fig. 4, first burner

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housing 300 defines the front burner housing and 400 and 500 referred to as second and third burner housings respectively define the rear burner housing) and in contact with a bottom surface of the sheet of glass (Column 6 lines 7-10) for forming spaces to burn mixed gas therein; front radiation gas burners (Fig. 6, front radiant burners 40) in lower parts of the front burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; rear radiation gas burners (rear radiant burners 40) in lower parts of the front burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; and an exhaust duct in lower parts (exhaust through holes 350) of, and in communication with the front and/or rear burner housings for discharging exhaust gas from the front and rear radiation burners toward the exhaust openings (Fig. 7 shows front and rear exhaust through holes).

In reference to claim 2

The exhaust system as claimed in claim 1 (see rejection of claim 1), wherein two sets of each of the front, and rear burner housings (300, 400 and 500), and the front, and rear radiation gas burners (40, front and rear) are provided, and the exhaust duct is arranged at a central part of the housing (Fig. 7, 350 and 650, located centrally) to pass between the front radiation gas burners and between the rear radiation gas burners.

In reference to claim 3

The exhaust system as claimed in claim 2 (see rejection of claim 2), further comprising a partition wall (Fig. 4, shows partition wall) at a central part of the exhaust duct, to divide the exhaust duct into two parts, one of which is in communication with the

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front burner housing and the rear burner housing on a left side, and the other one of which is in communication with the front burner housing and the rear burner housing on a right side (Fig. 8 clearly shows the separation of the exhaust ducts and burners).

In reference to claim 4

The exhaust system as claimed in claim 2 (see rejection of claim 2), wherein the exhaust duct includes two separate exhaust ducts of a left exhaust duct in communication with the front burner housing and the rear burner housing on a left side, and a right exhaust duct in communication with the front burner housing and the rear burner housing on a right side (Fig. 7 shows front and rear left side exhaust ducts separated from the front and rear right side exhaust ducts).

In reference to claim 5

The exhaust system as claimed in claim 1 (see rejection of claim 1), wherein the exhaust duct includes; a first exhaust duct in communication with the front burner housings, and a second exhaust (Fig. 3, exhaust ducts on 12) duct inside of, and separate from the first exhaust duct in communication with the rear burner housings (see Fig. 7 each burner has its own separate exhaust duct).

In reference to claim 7

The exhaust system as claimed in claim 1 (see rejection of claim 1), wherein the exhaust duct includes; a first exhaust duct in communication with the front burner housings, and second exhaust ducts separate from the first exhaust duct in communication with the rear burner housings, individually (see Fig. 7).

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In reference to claim 8

An exhaust system in a radiation gas range comprising: a housing having exhaust openings in a rear part for discharge of exhaust gas; a sheet of glass on top of the housing for transmission of radiant heat to a heating object placed thereon (see rejection of claim 1); two front burner housings, and two rear burner housings in contact with a bottom surface of the sheet of glass for forming spaces to burn mixed gas therein (Fig. 4, first burner housing 300 defines the front burner housing and 400 and 500 referred to as second and third burner housings respectively define the rear burner housing); two front radiation gas burners (Fig. 6, front radiant burners 40), and two rear radiation gas burners (rear radiant burners 40) in lower parts of the front, and rear burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; a first exhaust duct in lower parts of, and to pass through spaces between the front burner housings, and between the rear burner housings in communication with the front burner housings, for discharging exhaust gas from the front radiation burners toward the exhaust openings; and a second exhaust duct, inside of, and separate from the first exhaust duct in communication with the rear burner housings (Fig. 7 shows a plurality of exhaust ducts in communication with the rear burner housing).

In reference to claim 9

The exhaust system as claimed in claim 8 (see rejection of claim 8), further comprising a partition wall at a central part of the first exhaust duct, to divide the first exhaust duct into two parts, one of which is in communication with the front burner

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housing on a left side, and the other one of which is in communication with the front burner housing on a right side. See rejection of claim 3.

In reference to claim 10

The exhaust system as claimed in claim 8 (see rejection of claim 8), further comprising a partition wall at a central part of the second exhaust duct, to divide the second exhaust duct into two parts, one of which is in communication with the rear burner housing on a left side, and the other one of which is in communication with the rear burner housing on a right side. See rejection of claim 3.

In reference to claim 12

An exhaust system in a radiation gas range comprising: a housing having exhaust openings in a rear part for discharge of exhaust gas; a sheet of glass on top of the housing for transmission of radiant heat to a heating object placed thereon; two front, and rear burner housings in contact with a bottom surface of the sheet of glass for forming spaces to burn mixed gas therein; two front radiation gas burners, and two rear radiation gas burners in lower parts of the front, and rear burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; a central exhaust duct between lower parts of, and in communication with the front burner housings, for guiding exhaust gas from the front radiation gas burners to the exhaust openings; a partition wall at a central part of the central exhaust duct for dividing the central exhaust duct into two parts, one of which is in communication with the front burner housing on a left side, and the other one of which is in communication with the front burner housing on a right side; and two rear exhaust ducts in

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communication with rear parts of the rear burner housings individually, for discharging exhaust gas from the front radiation gas burners and the rear radiation gas burners toward the exhaust openings. See rejections of claims 1 through 7.

In reference to claim 13

An exhaust system in a radiation gas range comprising: a housing having exhaust openings in a rear part for discharge of exhaust gas; a sheet of glass on top of the housing for transmission of radiant heat to a heating object placed thereon; front and rear burner housings in contact with a bottom surface of the sheet of glass for forming spaces to burn mixed gas therein; front radiation gas burners in lower parts of the front burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; rear radiation gas burners in lower parts of the front burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; and an exhaust duct formed to adjoin to a bottom of the sheet of glass, in communication with one side part of each of the front and/or rear burner housings for discharging exhaust gas from the front, and rear radiation burners toward the exhaust openings. See rejection of claims 1 through 7.

In reference to claim 14

The exhaust system as claimed in claim 13 (see rejection of claim 13), wherein two sets of each of the front, and rear burner housings, and the front, and rear radiation gas burners are provided, and the exhaust duct is arranged at a central part of the housing to pass between the front radiation gas burners and between the rear radiation gas burners. See rejection of claim 3.

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In reference to claim 15

The exhaust system as claimed in claim 14 (see rejection of claim 14), further comprising a partition wall at a central part of the exhaust duct, to divide the exhaust duct into two parts, one of which is in communication with the front burner housing and the rear burner housing on a left side, and the other one of which is in communication with the front burner housing and the rear burner housing on a right side. See rejection of claims 2 through 4.

In reference to claim 16

The exhaust system as claimed in claim 14 (see rejection of claim 14), wherein the exhaust duct includes two separate exhaust ducts of a left exhaust duct in communication with the front burner housing and the rear burner housing on a left side, and a right exhaust duct in communication with the front burner housing and the rear burner housing on a right side. See rejection of claim 3.

In reference to claim 17

The exhaust system as claimed in claim 13 (see rejection of claim 13), wherein the exhaust duct includes; a first exhaust duct in communication with the front burner housings, and a second exhaust duct inside of, and separate from the first exhaust duct in communication with the rear burner housings. See rejection of claim 5.

In reference to claim 18

An exhaust system in a radiation gas range comprising: a housing having exhaust openings in a rear part for discharge of exhaust gas; a sheet of glass on top of

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the housing for transmission of radiant heat to a heating object placed thereon; two front, and rear burner housings in contact with a bottom surface of the sheet of glass for forming spaces to burn mixed gas therein; two front radiation gas burners in lower parts of the front burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; two rear radiation gas burners in lower parts of the rear burner housings respectively each for burning mixed gas at a surface of a radiation body to generate a radiation energy; a central exhaust duct formed at a central part of the housing to adjoin to a bottom of the sheet of glass, and to pass between the front burner housings, and between the rear burner housings, and in communication with one side part of each of the front burner housings, for guiding exhaust gas from the front radiation gas burners to the exhaust openings; and two rear exhaust ducts on both sides of a rear part of the central duct in communication with rear parts of the rear burner housings individually, for discharging exhaust gas from the rear radiation gas burners toward the exhaust openings. See rejection of claims 1 through 7

In reference to claim 19

The exhaust system as claimed in claim 18 (see rejection of claim 18), further comprising a partition wall at a central part of the central exhaust duct to divide the central exhaust duct into two parts of which one part is in communication with the front burner housing on a left side, and the other part is in communication with the front burner housing on a right side. See rejection of claim 3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6 and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

In reference to claim 6

Lee teaches the exhaust system as claimed in claim 5 (see rejection of claim 5), but fails to explicitly teach the second exhaust duct having a sectional area smaller than 1/2 of a sectional area of the first exhaust duct.

However, absent criticality or unexpected results the size of the exhaust duct is a design choice. Furthermore, there is no recitation in the disclosure that the sizing of the exhaust ducts of less than 1/2 the sectional area changes the functionality of the exhaust system in any distinct manner. Therefore, the sizing of the exhaust ducts would have been obvious at the time the invention was made to a person of ordinary skill in the art.

In reference to claim 11

The exhaust system as claimed in claim 8 (see rejection of claim 8), wherein the second exhaust duct has a sectional area smaller than 1/2 of a sectional area of the first exhaust duct. See rejection of claim 6.

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Application Publication No. 2006/0070616 and US Patent No.'s 6,234,161, 6,067,980, 5,139,007, 4,951,646 and 4,375,802 represent prior art that is relevant to this examination.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL A. BERNSTEIN whose telephone number is (571)270-5803. The examiner can normally be reached on Monday-Friday 8:00 AM - 5:00 PM EDT.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Bomberg can be reached on 571-272-4922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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August 28, 2008

/Fenn C Mathew/
Primary Examiner